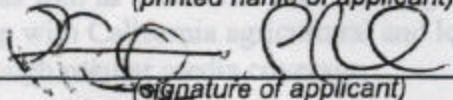


A. Cover Sheet (Attach to front of proposal.)

1. Specify: ☒ agricultural project or ☒ individual application or
☐ urban project ☐ joint application
2. Proposal title—concise but descriptive: Yolo County Resource Management Monitoring & Extension
3. Principal applicant—organization or affiliation: Yolo County Resource Conservation District
4. Contact—name, title: Paul Robins, Executive Director
5. Mailing address: 221 W. Court Street, Ste. 1
Woodland, CA 95695
6. Telephone: 530-662-2037, ext. 3
7. Fax: 530-662-4876
8. E-mail: robins@yolorcd.ca.gov
9. Funds requested—dollar amount: \$ 696,603.88
10. Applicant cost share funds pledged—dollar amount: \$ _____
11. Duration—(month/year to month/year): Sept. 2001 to Sept. 2004
12. State Assembly and Senate districts and Congressional district(s) where the project is to be conducted:
State Assembly Districts 2 and 8; State Senate District 4;
Congresional District 3
13. Location and geographic boundaries of the project: Yolo County, CA (with State-wide outreach)
14. Name and signature of official representing applicant. By signing below, the applicant declares the following:
— the truthfulness of all representations in the proposal;
— the individual signing the form is authorized to submit the application on behalf of the applicant;
— the applicant will comply with contract terms and conditions identified in Section 11 of this PSP.
- Paul Robins, Exec. Dir.
(printed name of applicant)
- 
(signature of applicant)
- 2/15/01
(date)

CALFED Water Use Efficiency Program Proposal
Yolo County Resource Conservation District
February 15, 2001

**Proposal for Project Extension:
“Yolo County Resource Management Monitoring & Extension”**

SCOPE OF WORK

Relevance and Importance

1. Executive Summary

This proposal has three primary objectives in support of CALFED goals for improved water use efficiency and water quality in Yolo County (WUE subregions 6 and 3) and its impact on the Bay-Delta system:

1. Research and evaluate locally-appropriate methods for reducing non-productive evapotranspiration, improving irrigation management, and minimizing movement of non-point source water pollutants off farms;
2. Communicate successful techniques to regional farmers and the general public through field meetings, press, and publications; and
3. Develop an extensive collaborative outreach program to other Resource Conservation Districts (RCDs) and other relevant groups statewide to promote partnerships and capacity-building for more effective promotion and implementation of water use efficiency measures in their respective regions.

With new CALFED funding, the Yolo County Resource Conservation District (YCRCD) will be able to extend and expand the work it initiated for the CALFED Water Use Efficiency Program in December 2000. That project consists of 1) water use and quality improvements along with evaluations associated with tailwater recovery and return systems, irrigation water management and cover crops; 2) education and outreach; and 3) evaluation of potential partnerships for promoting water use efficiency throughout the CALFED region. However, that project is funded for only 12 months. Data gathered from on-farm conservation evaluations will be more valuable if it can be repeated through multiple seasons, and the partnership evaluation component of the project has as its logical next step, a collaborative outreach program as noted in the proposed objectives above.

The water management portion of the proposed project will focus on irrigation efficiency improvements along with winter and irrigation runoff water quality improvement techniques such as vegetated filter strips and tailwater pond management. Assessment techniques will incorporate the use of head and tailwater measurements with flowmeters and water level sensors, soil moisture monitoring with buried sensors, and field and laboratory-tested grab samples. This portion of the project will benefit from a cooperative arrangement with University of California Cooperative Extension Irrigation Specialists and Natural Resources Conservation Service (NRCS) personnel.

The YCRCD has established itself regionally as a reputable source of conservation innovation and information, and this proposal will support the continuation of the YCRCD's outreach efforts regarding on-farm water conservation. Information from project water management activities and monitoring will be collected with results from prior YCRCD studies for dissemination in articles and brochures as well as a series of field meetings during the life of the project. The YCRCD's solid relationship with California agricultural and local press will also serve to communicate project results through regular media coverage.

The proposed collaborative outreach program will incorporate the California Association of Resource Conservation Districts (CARCD) as a natural conduit to other RCDs in the state to implement CARCD's proposed RCD capacity-building program for CALFED and the US Bureau of Reclamation. This will include a series of presentations for RCDs regarding CALFED water conservation goals and needs, proposal development support for individual RCDs, and the development of an interagency team of "conservation experts" to provide expertise to CARCD's efforts to promote RCD water conservation efforts throughout the state.

As a whole, the proposed project will serve not only to refine and promote adoption of water conservation techniques for attaining CALFED Quantifiable Objectives in Yolo County, but will extend that information to other farmers, RCDs, and agricultural industry and agency representatives. The local outreach and RCD outreach programs will provide maximum exposure for the information generated and ultimately help to empower other RCDs or local groups to improve their own conservation efforts in the CALFED area.

2. Statement of critical water issues

In the *Draft Details of Quantifiable Objectives* (2000), the CALFED Water Use Efficiency Program identifies several water conservation issues in Yolo County that are shared concerns with the Yolo County Resource Conservation District—namely irrigation efficiency and tailwater quality leaving farms and entering the Bay-Delta system. The CALFED *Ecosystem Restoration Program Plan* (ERPP, Vol. II, pp. 317-337) also identifies the county's waters (Putah Creek, Cache Creek, and Willow Slough) as significant contributors to the health of the Bay-Delta Ecosystem. The YCRCD's 1996 *Willow Slough Watershed Integrated Resources Management Plan* (WSP) addresses these concerns and provides a suite of recommended on-farm practices for addressing them—practices such as tailwater return ponds, cover crops, and filter strips.

While these practices may be generally accepted as beneficial, their actual effects are still not properly quantified in a way that would satisfy CALFED goals for attaining "Quantifiable Objectives" or determining the cumulative water quality/conservation impacts of their widespread adoption in a given region. The YCRCD is similarly concerned in quantifying potential on-farm water conservation improvements for the sake of farmers who want to remain compliant with anticipated water quality restrictions on farm tailwater. This proposal is intended to generate some of that needed data and communicate it to regional farmers, interested agency personnel, and the general public.

While RCDs may be recognized as established and natural agents primed to function as conduits for CALFED to achieve its goals through locally developed and implemented on-farm conservation efforts, apparent barriers exist that hinder RCDs' full potential to play that role. CALFED recognizes that concern and has contracted with the YCRCD to explore those issues and develop recommendations for improving RCD capacity as well as potential partnerships between RCDs (or other local groups) and irrigation districts to promote local adoption of water use efficiency measures on farms. CARCD is similarly concerned with improving statewide RCD capacity, and is the appropriate organization to serve that need. In this proposal, the YCRCD proposes to incorporate CARCD as an RCD advocate and trainer to undertake "RCD-by-RCD" capacity-building for local implementation of CALFED Water Use Efficiency programs.

3. Nature, scope, and objectives of project

Although the proposed work will potentially impact the entire CALFED area through outreach and extension efforts, work directly addressing the Water Use Efficiency Program's Quantifiable Objectives will be limited to Yolo County, which includes portions of WUE subregions 3 and 6.

This work will address the following Quantifiable Objectives (QOs):

- 25: Decrease nonproductive ET to increase water supply for beneficial uses (region 3)
- 53: Decrease non-productive ET to increase water supply for beneficial uses (region 6)
- 54: Provide long-term diversion flexibility to increase water supply for beneficial uses (region 6)

and the following Priority Outcomes (POs):

- 22,23: Reduce pesticides to enhance and maintain beneficial uses of water (region 3)
- 52: Reduce pesticides to enhance and maintain beneficial uses of water (region 6).

How the above QOs and POs are addressed is described further under the proposed scope of work below.

The proposed work falls under three basic categories: evaluation of irrigation and runoff management techniques for meeting the above QOs and POs, communicating project results through on-going outreach efforts, and facilitating capacity-building for other RCD-led (and those of similar organizations) on-farm water conservation programs and partnerships. These categories serve as the project objectives in the following scope of work.

Objective 1: Research and evaluate locally-appropriate methods for reducing non-productive evapotranspiration, improving irrigation management, and minimizing movement of non-point source water pollutants off farms.

Tasks:

- Coordination with UCCE irrigation specialist and local Farm Advisors
- Winter runoff monitoring for water volume, sediment, and nutrients in one row crop and one orchard site, each with cover crop or filter strip treatments versus fallow control.
- Irrigation management evaluations for selected farmer cooperators that include monitoring of soil moisture (season long), flows into and leaving the field, and distribution uniformity (2-3 events per season).
- Recommendations developed based on evaluations and monitoring of impacts of implementation.
- Monitoring of subsurface water movement adjacent to established tailwater ponds relative to pond management technique of selected farmer cooperators.

Deliverables: All data and analysis developed will be included in project annual and final reports.

While the elements of this objective address the QOs and POs listed above, it is premature to attempt to quantify their contributions. It is precisely the purpose of these tasks to develop quantifiable impacts of the above conservation techniques. The YCRCD has different CALFED funding to quantify the "capture" effects of tailwater ponds and sediment traps, so they are not included in this proposal. However, that information is pertinent to the CALFED WUE QOs and will be incorporated into project reports and outreach efforts (described below).

Objective 2: Communicate successful techniques to regional farmers and the general public through field meetings, press, and publications.

Tasks:

- Develop on-going project progress stories for local news and agricultural media
- Hold two field meetings per year (one on irrigation management and one on winter runoff management) for farmers, press and the general public.
- Develop outreach/handout materials communicating project results
- Present project results to relevant professional and agricultural industry meetings.
- Develop papers for publication based on project results.
- Incorporate project findings in existing YCRCD products such as website (<http://www.yolorcd.ca.gov/>), *Bring Farm Edges Back to Life!*, and *Monitoring on Your Farm*.

Deliverables: News and magazine articles, field meetings, on-going project update and results handouts, presentations, published results.

Objective 3: Develop an extensive collaborative outreach program to RCDs and other relevant groups statewide to promote partnerships and capacity-building for more effective promotion and implementation of water use efficiency measures in their respective regions. This will be implemented primarily by a coordinator contracted by the California Association of Resource Conservation Districts (CARCD)

Tasks:

- Coordinate RCD outreach program with CARCD
- Develop a portable mini-seminar and internet and paper information sources to educate RCDs and similar organizations about CALFED water conservation mandates and needs.
- Develop and coordinate a “Water Use Efficiency Specialists” team that will serve as consultants for the CARCD WUE Coordinator and RCDs that need support in developing local on-farm WUE projects.
- Work with RCDs and similar organizations to develop proposals, contracts, workplans, monitoring and reporting protocols for CALFED Water Use Efficiency projects.

Deliverables: mini-seminars, web pages and documents for RCDs, “WUE Specialists” team discussions, successful proposals submitted to CALFED WUE program by RCDs

Technical Merit, Feasibility, Monitoring and Assessment

4. Methods, procedures and facilities

The methods for the tasks described under Objective 1 in the preceding section are outlined below:

Winter runoff monitoring

The YCRCD’s preferred technique for flow measurement is that of a pressure transducer set behind a 90° v-notch weir or RBC (Replogle, Clemmens, and Bos, 1984) flume at the tail end of a set of grouped furrows. This has already proven effective in RCD cover crop runoff evaluations in an annual crop setting. Orchard runoff evaluations will likely also be made with a similar weir-transducer set up. Depending on the drainage conditions on the site, however, another option that has been successfully employed by UCCE researchers (but which does not provide a hydrograph of the runoff event) is that of a buried bucket and sump pump with a flowmeter on its outlet. Grab samples during rainfall events are most easily procured by pairing an automated water sampler with the water

level sensor. However, samples can be captured by hand when conditions permit. Such samples will be linked to the hydrograph of the given runoff event for relevance. All water samples will be cooled or frozen and shipped overnight in insulated containers to the USDA Agricultural Research Service (ARS) Laboratory in Corvallis, Oregon for analysis of suspended solids, nitrate, phosphorous and ammonia.

Irrigation monitoring

Soil moisture will be monitored with WaterMark gypsum block sensors and recorded every 2-3 days. Depending on the crop and field situation, blocks will be set at appropriate depths (e.g., 1', 2', 3', and 4' or more) at appropriate intervals down a given field and replicated along several rows. Inflow and outflow measurement techniques will also depend on the water source (well or surface water) and water delivery configuration (open ditch or pipe). Possible techniques include flowmeters installed on pumps, propeller meters in an inserted section of pipe, and weirs or flumes with water level sensors. Mr. Larry Schwankl of UCCE will provide invaluable guidance during this task especially. General irrigation evaluation will employ the "standard" techniques promoted by Dr. Charles Burt and the Irrigation Training and Research Center at California Polytechnic State University, San Luis Obispo.

Subsurface Water Movement adjacent to Tailwater Ponds

This work will be undertaken with leadership from Dr. Steve Griffith of the USDA ARS in Corvallis, OR using test wells with pressure transducer water level sensors set at appropriate distances from selected ponds.

5. Schedule of Work

Task	2001	2002				2003				2004			
	SOND	JFMAMJJASON	D	JFMAMJJASON	D	JFMAMJJASON	D	JFMAMJJASON	D	JFMAMJJASON	D	JFMAMJJASON	D
Winter runoff eval.	-----					-----						X	
Irrigation Eval.		-----				-----						X	
Tailwater Ponds		-----				-----						X	
News articles		X		X		X		X		X		X	
Field meetings		X		X		X		X		X		X	
Handout materials		X		X		X		X		X		X	
Presentations (dependent upon conference timing and opportunity)													
Publication												X	
Mini-seminar and materials ready	X	-----											
WUE Expert Team available	X												
Work w/ RCDs		-----											
Reports	X	X	X	X	X	X	X	X	X	X	X	X	X

Estimated cost per task

Runoff eval	\$ 110,000.00
Irrig eval	\$ 120,000.00
Pond eval	\$ 40,000.00
Articles	\$ 8,000.00
Meetings	\$ 4,000.00
Materials	\$ 5,000.00
Presentations	\$ 5,000.00
Publication	\$ 5,000.00
Mini-seminars	\$ 104,000.00
WUE expert team	\$ 104,000.00
RCD support	\$ 104,000.00
Admin/Reports	\$ 87,000.00
Total	\$ 696,000.00

Costs for the first eight quarters of the project should be roughly constant: approximately \$75,000 per quarter. During the final year of the project, quarterly billings will be closer to \$32,000 per quarter.

6. Monitoring and assessment

Actual monitoring techniques are described in the Methods section above. All personnel engaged by this project will keep updated and accurate records in the form of notebooks. All non-automated data will be logged on standardized data sheets. All automated data collected will be printed or, if possible, immediately transferred into a computer spreadsheet (EXCEL, Microsoft Corp.). All data logged onto data sheets or printed out onto hard copy, will be immediately photocopied and entered into a computer spreadsheet. Eventually all data will be entered in an EXCEL spreadsheet where it can be managed and statistically analyzed. All data entered into the computer will be backed up on hard disk memory and on floppy disks, zip disks and/or CDs, which will be produced in duplicate and one copy stored at a separate location.

All personnel will be required to report on their progress on a monthly basis. The Project Manager will be responsible for synthesizing all information into one integrated report for submission to CALFED.

OUTREACH, COMMUNITY INVOLVEMENT, AND INFORMATION TRANSFER

1. Describe outreach

Outreach is an integral element of the proposed work, as described in the scope of work above. All members of the public are welcome to YCRCD field meetings, and all meetings are announced in the local newspapers to ensure that as broad a population as possible can be aware of the YCRCD's work.

2. Training, employment, and capacity building potential

Typically between 20 and 50 people attend YCRCD field meetings, and four meetings are planned. As a result, we expect to reach a minimum of 80 people through field meetings alone. Once the RCD outreach program is initiated, that number could easily double. This assumes that a minimum of 20 RCDs participate with an average of four people (including directors and staff) participating from each RCD. Many more people will be reached through the media and word of mouth, which is beyond our ability to estimate.

3. Plan for disseminating info on results and promoting application

Our plan for information dissemination is detailed in the Scope of Work above under Objective 2.

4. Copies of Local notification letters attached:

- Yolo County Planning and Public Works
- Yolo County Flood Control District
- Yolo County Board of Supervisors

QUALIFICATIONS OF THE APPLICANTS, COOPERATORS, AND ESTABLISHMENT OF PARTNERSHIPS**1. Resumes attached:**

- Paul Robins, YCRCD Executive Director, will provide project oversight and direction with and for the Project Manager.
- William A. Spong, YCRCD Water Quality Specialist, will serve as project manager. He is currently working on the RCD's WUE Pilot Project.

2. Identify and describe the role of external cooperators :

Larry Schwankl, UCCE, will provide direction and expertise to YCRCD project staff regarding irrigation evaluation and water flow measuring and monitoring. Mr. Schwankl is a highly regarded irrigation specialist and has special expertise in irrigation flow measurement techniques on farms.

Steve Griffith, USDA ARS, will provide expertise and direction to YCRCD project staff regarding subsurface water monitoring. Mr. Griffith has been a Research Plant Physiologist with USDA-ARS since 1986. Currently, he serves as a team member and leader of groups of scientists addressing sustainable grass seed cropping systems with emphasis on small farm sustainability. His research looks to optimize economic and environmental factors associated with nutrient use, reduced tillage, and post-harvest residue management. Specific research involves the soil biogeochemistry of agricultural and unmanaged lands as it relates to N and C cycling, especially under hydric conditions, riparian zone function in improving water quality, N management of grass seed crops, and applying site specific process and biogeochemical information in a landscape context.

Tom Wehri, CARCD Executive Director, will provide oversight, expertise and direction for the RCD support program submitted in this proposal. Kathleen Robins, contractor to CARCD, will provide additional expertise. Both Mr. Wehri and Ms. Robins have worked closely with many RCDs statewide and are not only familiar with their abilities, resources and limitations, but also well-regarded as RCD advocates. Mr. Wehri, before joining CARCD in 1997, fulfilled a career with the USDA NRCS, which culminated in his position as State Conservationist for Arkansas. Ms. Robins has served CARCD for the past four years as the Statewide Project Manager for the recently-concluded Total Resource Management Challenge Grant.

3. Partnerships developed to implement project

Through past projects, the YCRCD has developed lasting partnerships with numerous local agencies, organizations, farmers, and experts that will support the proposed work along with other YCRCD efforts. Partnerships that will serve this project specifically are outlined below:

Larry Schwankl, UCCE Irrigation Specialist (noted above)

Gene Miyao, UCCE Vegetable Crops Farm Advisor for Yolo and Solano Counties

Mr. Miyao has worked closely with the YCRCD for the past three years on a collaborative cover crop evaluation project partially-funded by the California Department of Food and Agriculture Fertilizer Research and Education Program. He regularly provides input for the RCD relative to his expertise as requested.

Rachael Freeman Long, UCCE IPM and Field Crops Farm Advisor for Yolo and Solano Counties

Ms. Long has worked closely with the RCD as Principal Investigator of the RCD's successful Hedgerow Project. She continues to investigate the IPM benefits of native insectary plantings as well as water quality issues related to alfalfa irrigation runoff. She also provides expertise to RCD staff on a regular basis that will be pertinent to this project.

Steve Griffith, USDA ARS, Corvallis, OR. (noted above)

The California Association of Resource Conservation Districts (noted above under Tom Wehri)

The Natural Resources Conservation Service, Woodland Field Office

The Woodland NRCS District Conservationist and Field Office staff are an essential partner to the YCRCD as sources of expertise, conduits to Federal funding sources, and project technical support. The YCRCD and NRCS have a Memorandum of Understanding that reinforces the mutually supportive relationship between the two organizations.

The Natural Resources Conservation Service, California State Office

Personnel of the CSO Engineering and Watershed Planning Teams lend regular support to YCRCD efforts. Pertinent to this project will be the support of Hydrologist Vern Finney and Irrigation Experts Dan Johnson and Arturo Carvajal. Mr. Finney is supporting the YCRCD staff in refining its water sampling techniques, while Mr. Johnson and Mr. Carvajal provide irrigation evaluation and management expertise upon request.

The Yolo County Flood Control and Water Conservation District (YCFCWCD)

The YCFCWCD has been an important collaborator with the YCRCD on several past projects as well as those on-going. The YCFCWCD has provided nearly \$100,000 of earthwork as a matching contribution to the RCD over the past six years and was a partner in the development of the *Willow Slough Watershed Integrated Resources Management Plan* (1996). In this project they will potentially serve as a resource in exploring local RCD-Water District partnerships for promoting on-farm Water Use Efficiency.

The Yolo County Farm Bureau

The Farm Bureau has supported the RCD in its efforts to communicate the need for on-farm water quality measures. Its support helps maintain and strengthen the YCRCD's relationship with the local farming community. The Farm Bureau's Water Quality Committee is also supportive of the YCRCD's efforts.

Local Farmer Cooperators

Ready cooperation from many local farmers facilitates the successful deployment of YCRCD field trials, demonstrations and monitoring efforts. This partnership enables the RCD's efforts to remain

relevant and well-regarded by the community that it is created to serve. Volunteer farmer cooperators will provide sites for all of the proposed field work as well as occasional equipment, supplies and labor.

COSTS AND BENEFITS

1. Budget summary and breakdown

Yolo County Resource Management Monitoring and Extension
Proposed Budget

Expense	FY 01-02	FY 02-03	FY 03-04	Totals
Project Manager	\$ 41,600.00	\$ 43,680.00	\$ 17,640.00	\$ 102,920.00
Project Assistant	\$ 16,640.00	\$ 17,680.00		\$ 34,320.00
YCRCD Executive Director	\$ 13,770.00	\$ 14,445.00	\$ 7,306.00	\$ 35,521.00
Fringe Benefits (25%)	\$ 18,002.50	\$ 18,951.25	\$ 6,236.50	\$ 43,190.25
Administrative support	\$ 2,000.00	\$ 2,000.00	\$ 1,000.00	\$ 5,000.00
Travel	\$ 2,500.00	\$ 2,500.00	\$ 625.00	\$ 5,625.00
Supplies	\$ 20,000.00	\$ 5,000.00		\$ 25,000.00
Equipment (Truck rental)	\$ 6,000.00	\$ 6,000.00	\$ 1,500.00	\$ 13,500.00
Professional Services (CARCD)	\$ 104,400.00	\$ 104,400.00	\$ 104,400.00	\$ 313,200.00
Lab Services	\$ 20,000.00	\$ 20,000.00		\$ 40,000.00
Outreach costs (printing, mailing, film purchase & development)	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 15,000.00
Overhead (10%)	\$ 24,991.25	\$ 23,965.63	\$ 14,370.75	\$ 63,327.63
Total Estimated Costs	\$ 274,903.75	\$ 263,621.88	\$ 158,078.25	\$ 696,603.88

2. Budget Justification

Personnel

- All pay rates described below are averaged over the project term and take into account 5% annual pay increases.
- The project manager will receive an average pay rate of \$21/hour working full time
- A Project assistant will receive an average pay rate of \$16.50/hr working full time during the irrigation season (approximately six months).
- The YCRCD Executive Director will provide oversight and direction to the project at an average pay rate of \$27/hour at 1/8 time (on average).
- Direct Administrative support will consist of material and outreach activity preparation and coordination, provided by the YCRCD Administrative Assistant at a rate of \$15/hr. (no fringe benefits) on an as-needed basis.

Consultant (CARCD)

The consultant's budget for this project incorporates the following:

- 1) A contracted coordinator, responsible for program development, reporting, accounting and ongoing project coordination, both with participating RCDs and with the project's CALFED partners
- 2) Professional Services fees for the "WUE Specialists" team
- 3) Travel funds for the coordinator and the WUE Specialists
- 4) Communications and Education funds (for web page development and maintenance, mailings, brochures and other outreach efforts)

Per Annum Budget figures :

Contracted Coordinator (billable rate)	\$ 70,000
Professional Services (180 hours @ \$80/hr av. Rate)	\$ 14,400
Travel	\$ 10,000
Communication	<u>\$ 10,000</u>
<i>Total Budget per year</i>	<i>\$104,400</i>

Equipment

The project will lease a truck for the project period at an estimated rate of \$500 per month.

Supplies

Flow monitoring, water sampling, and lab supplies needed for the project will be purchased primarily in the first year of the project. Supplies will include a small computer station or laptop, flowmeters, water level sensors, manufactured weirs (or similar structures to assist flow measurement), water moisture sensors (e.g. Watermark), and small items such as sampling bottles and lab maintenance supplies.

Travel

- truck fuel, insurance, and maintenance
- Reimbursement for personal vehicle use at \$0.315/mile
- Conference, meeting, accommodation, and subsistence expenses for pertinent travel and professional development or outreach opportunities.

Lab Services

Includes laboratory analysis fees including shipping fees for mailing samples to the laboratory.

Outreach Costs

- Document production and mailing costs for brochures and articles produced by project staff.
- Field meeting or workshop announcement printing and mailing costs.
- Outreach event costs such as room rental, snacks, honoraria, and transportation.
- Film purchase, development and reproduction for project outreach materials.

3. Benefit summary and breakdown—expected project outcomes (physical changes and their value)

Because the nature of this project is to develop the information needed to quantify on-farm water conservation technique impacts, it is inappropriate to generate an estimate of the value of physical changes associated with the proposed work. However, qualitative benefits anticipated from the project are noted below:

- Useful, rigorous data quantifying (but not necessarily associating a cost benefit to them) the benefits of improved irrigation efficiency, tailwater return systems, and filter strips (in terms of water quality and reduced winter runoff).
- Increased understanding of the need for water conservation and the means for implementation among the Yolo County farming community and general public.
- Statewide communication of project activities through the agricultural press will provide new information to many regarding on-farm water management efforts and CALFED's interest and role in promoting it.
- A large, trained network of on-farm conservation delivery agents across the state, through the RCD network

- A consulting team of experts versed in both CALFED requirements and farmer sensibilities
- Educational materials, both electronic and hard copy about the Water Use Efficiency program, tailored to RCDs and similar groups and farmers.
- The good will generated by locally conceived, developed and implemented programs in achieving common (CALFED) goals

4. Assessment of costs and benefits

As stated above, such an analysis is premature until project data is gathered, analyzed, and published.